

# ***ERGONOMICS***



*FROM THE GREEK WORDS  
ERGOS (WORK) AND  
NOMOS (LAW),  
ERGONOMICS IS THE LAW  
OF WORK.*

# *WHAT IS ERGONOMICS?*

## **ERGONOMICS -**

***The study of the design of work in relation to the physiological and psychological capabilities of people (matching the work place to the worker.)***



***DO I NEED AN  
ERGONOMICS PROGRAM?***

**WELL? HMMM? WHERE  
SHOULD I START???**

# ***WORKSITE ANALYSIS***

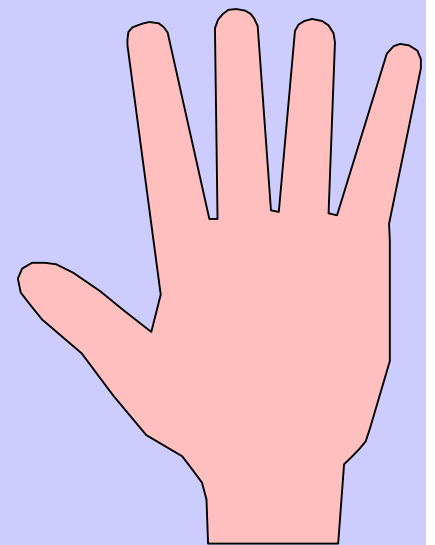
- **INJURY/ILLNESS RECORDS**
- **INJURY COMPENSATION RECORDS**
- **CTD EXPERIENCES (Cumulative Trauma Disorders)**
- **IDENTIFICATION OF SPECIFIC JOBS/LINE OFFICES**

## ***ANALYSIS (CON'T)***

- **ABSENTEEISM**
- **PERSONNEL TURNOVERS**
- **FITNESS AND AGE OF WORKER**
- **DESCRIPTION OF JOB(S)**
- **COST OF CTD CASES**

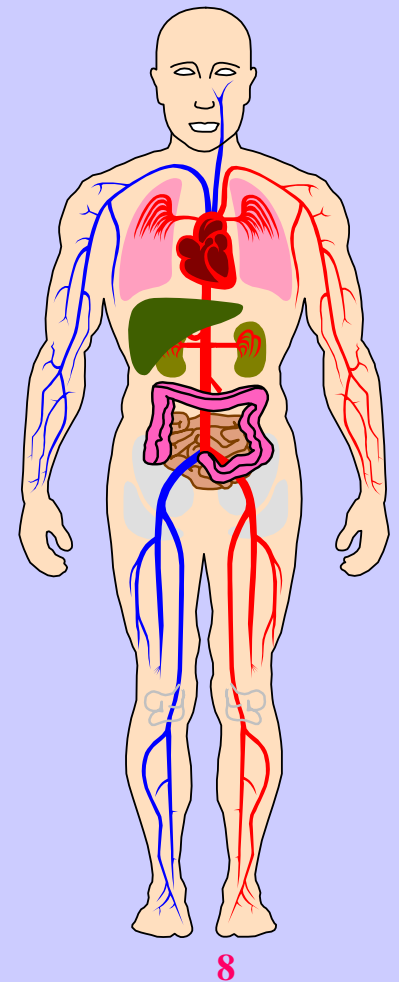
# *SCOPE OF ERGONOMIC INJURIES*

- **CUMULATIVE TRAUMA DISORDERS (CTDS)** are health disorders arising from repeated biomechanical stress.
- **CTD involves damage to the tendons, tendon sheaths, related bones, muscles, and nerves of:**
  - **Hands, wrists, elbows, shoulders, neck, back.**



*MORE FREQUENTLY OCCURRING  
OCCUPATIONALLY INDUCED DISORDERS:*

- **CARPAL TUNNEL SYNDROME**
- **TENDONITIS**
- **TENOSYNOVITIS SYNOVITIS**
  - (INFLAMMATION OF THE LUBRICATING FLUID OF THE JOINTS)
- **STENOSING TENOSYNOVITIS OF THE FINGERS (INFLAMMATION OF TENDON SHEATH)**
- **LOW BACK PAIN**





## *SOME POTENTIAL INDICATORS/SYMPTOMS OF CTDS*

- **Trends in accidents and injuries**
- **Incidents of CTD**
- **Absenteeism**
- **High turnover rate**
- **Working conditions noted by people with disabilities**
- **Complaints about musculoskeletal pain**
- **High overtime and increased work rate**
- **Manual material handling/repetitive motion task**
- **Poor product quality**

# ***LINE OFFICE RESPONSIBILITIES***

- ANALYZE INJURY AND ILLNESS RECORDS**
- REVIEW ALL SCREENING SURVEYS**
- DECIDE IF ERGONOMICS PROGRAM IS NEEDED**
- DOCUMENT THE RATIONALE FOR DECISION**

# ***MANAGEMENT COMMITMENT***

- PROVIDES THE ORGANIZATIONAL RESOURCES AND MOTIVATING FORCE**
- AGGRESSIVE MANAGEMENT ACTION IS NECESSARY TO PREVENT CTD INJURIES AND TO CONTROL CLAIMS**
- SHIFT WORK ERGONOMIC CONSIDERATIONS**

# ***SUPERVISOR RESPONSIBILITIES***

- ENFORCE SAFE WORK PRACTICES ESTABLISHED AT THEIR ACTIVITY**
- ENSURE EMPLOYEES RECEIVE PROPER TRAINING**
- ENSURE EMPLOYEES RECEIVE MEDICAL SURVEILLANCE**

# ***EMPLOYEE INVOLVEMENT***

## **AN EFFECTIVE PROGRAM WILL**

### **– ENCOURAGE EMPLOYEE INVOLVEMENT**

- SAFETY AND HEALTH COMMITTEES**
- PROCESS ACTION TEAMS (PAT)**

# ***HAZARD PREVENTION AND CONTROL***

- ENGINEERING TECHNIQUES**
- ADMINISTRATIVE CONTROLS**
- FACILITY MODIFICATION**
- EQUIPMENT PURCHASES**

# *ENGINEERING TECHNIQUES*

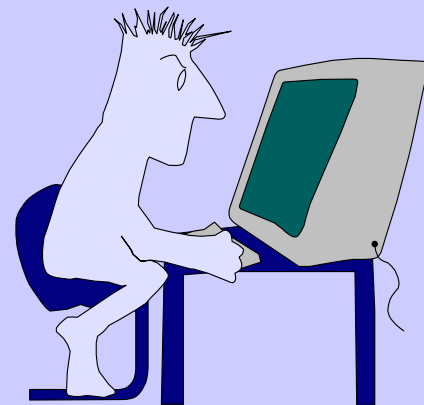
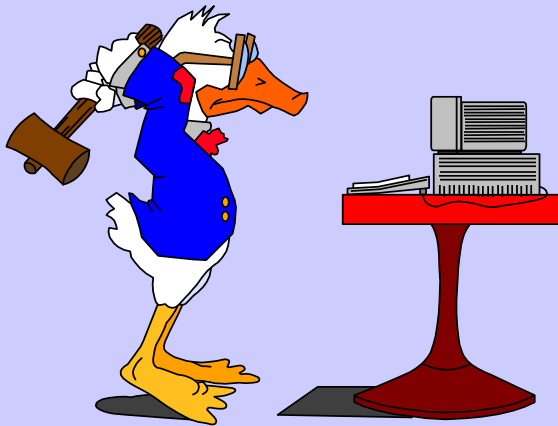
Engineering techniques are the preferred mechanism for controlling ergonomic hazards. This may entail redesigning the work station, work methods, and

tools to reduce the demands of the job, such as exertion, repetition, and awkward positions.



# ***WORK STATION DESIGN***

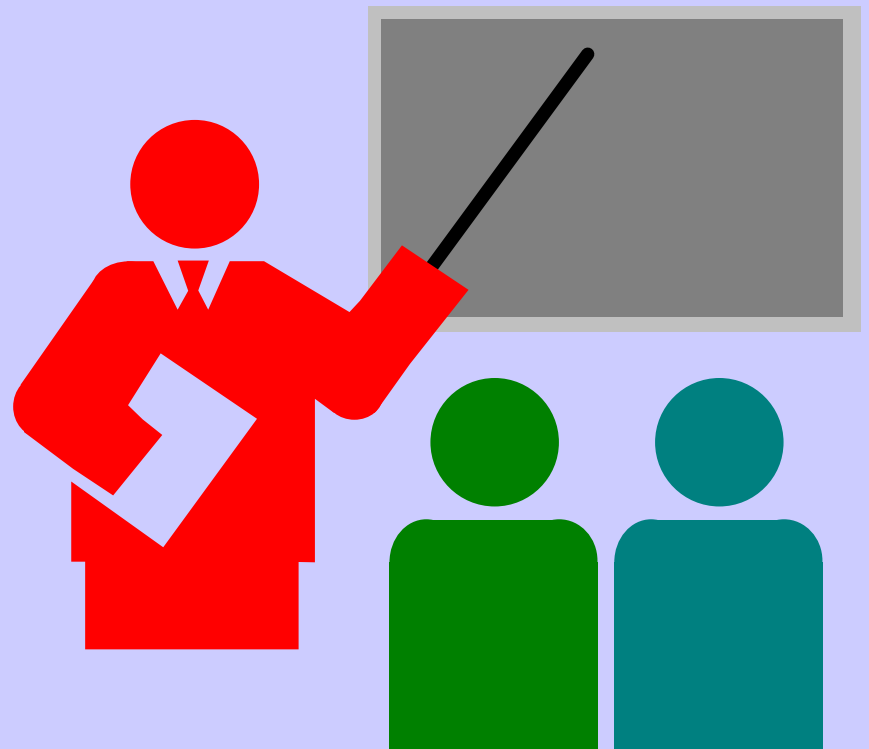
**WORKSTATIONS SHALL BE EASILY ADJUSTABLE  
TO ACCOMMODATE THE WORKER PERFORMING  
THE TASK**





# *ADMINISTRATIVE CONTROLS*

- **Controls such as:**
  - **Rotating personnel to jobs with dissimilar physical requirements**
  - **Establishing work/rest schedules**
  - **Training personnel to use appropriate work methods when engineering controls are not feasible**



# ***TRAINING***

- **ERGONOMIC DEFINITION AND CONCEPTS**
- **CTD AND BACK INJURY PREVENTION**
- **VARIETIES OF CTD AND CAUSES**
- **ERGONOMICS OF HAND TOOLS**
- **EQUIPMENT DESIGN**
- **PROPER MAINTENANCE OF FACILITIES, EQUIPMENT, AND TOOLS**

# ***TARGET AUDIENCE***

- **MANAGERS**
- **SUPERVISORS**
- **EMPLOYEES**
- **OCCUPATIONAL SAFETY AND  
HEALTH PROFESSIONAL STAFF**
- **HEALTHCARE PROVIDERS**
- **FACILITY ENGINEERS**

# ***PERSONNEL AT RISK FOR BACK INJURIES***

- TRAINING SHALL INCLUDE**
  - ANATOMY AND PHYSIOLOGY TO EXPLAIN HOW THE BACK WORKS**
  - BIOMECHANICS OF LIFTING AND LIFTING TECHNIQUES**
  - HOW TO AVOID BACK INJURIES**
  - WEIGHT CONTROL AND PHYSICAL FITNESS**

# ***THE BACK***

- **24 BONES (VERTEBRAE) AND DISKS**
- **SPINAL CORD (1/2 DIA.)**
- **NERVES (31 PAIRS)**
- **MUSCLES (400 AND 1000 TENDONS)**

# ***THE BACK***

## ***(cont)***

- **STRAIN/SPRAINS (MUSCLES)**
- **FRACTURED VERTEBRA**
- **HERNIATED DISK (SLIPPED DISK)**
- **DISEASE**

# *So how do you prevent more back injuries?*

- At work
- At home
- In your car
- Sports
- Playing with your children

# ***THE FIVE-WORD WEIGHT- LOSS FORMULA***

**Eat less and exercise more**



*A COMPREHENSIVE  
WELLNESS PROGRAM  
SHOULD SUPPORT AN  
ERGONOMICS PROGRAM*

**NOT  
MY  
JOB**



# ***REVIEW AND SUMMARY***



# ***QUESTIONS??????***

**If you need assistance in this  
program or with performing an  
ergonomic survey:**

**Contact Rhonda Carpenter at  
(303) 497-3912 or at**

**[Rhonda.S.Carpenter@noaa.gov](mailto:Rhonda.S.Carpenter@noaa.gov)**